

The Centre for Advanced Computing

**Advance Research Computing at Queen's
– A well Kept Secret**



Background



- The Centre for Advanced Computing (CAC) was initially established in 2000 as the High Performance Computing Virtual Laboratory (HPCVL)
 - An Eastern Ontario consortium involving Queen's, RMC, uOttawa and Carleton
 - Supporting “traditional” HPC applications
 - Initially supported equipment based at Carleton, uOttawa and Queen's
 - Part of the Compute Canada family
- Getting out of the witness protection program!
 - Rebranded in April of 2016 – this was more than just a name change
 - Equipment refresh – older SUN platforms replaced by state-of-the-art Intel clusters
 - Enhanced focus on client support, with a particular focus on the health sciences

What do we do?

- High availability, data centre
 - 99.997% centre-level availability over the past 7 years
 - Redundant (N+1) UPS systems and a diesel generator set, as well as redundant AC units
 - 24/7/365 on-call systems support
- High security, data centre
 - PHIPA, HIPPA, ISO 27001 compliant
 - FDA 21 CFR Part 11 enablement
- Access to state-of-the-art computational resources, via Compute Canada allocation, and directly via the CAC
 - 5,000 Processors
 - 3PB disk storage and over 60 PB of tape, all managed by IBM Spectrum Scale (HSM)
 - Daily encrypted back-up of all data to two sites

More of what do we do

- Access to dozens of software applications
 - REDcap, Gaussian, Fluent, Abaqus, COMSOL, OpenFOAM, PyRx, Gromacs ...
- Support for applications
 - Via the CAC team in Kingston
- Hands-on training
 - From one-on-one to 20 person group courses
 - How to parallelize applications
 - Bioinformatics 101
 - R programming
 - ...
- Grant application development assistance
- Access to the “condo” – a shared resource environment

And more

- The “Analytics Development Hub”
 - Partnership with IBM to build capacity in Watson development
 - SOSICIP is an initial partner leveraging this investment
 - We’re building a talent pool
 - Currently 9 people on the team
 - Cost recovery model – the Hub is aiming to be self-sufficient within the first year
 - Output will often be a “prototype”, or “proof of concept”

Contact Info

Don Aldridge
Executive Director
Centre for Advanced Computing
Don.Aldridge@queensu.ca
613-876-1070

Chris MacPhee
Operations Manager
Centre for Advanced Computing
Chris.MacPhee@queensu.ca
613-539-8155



cac.queensu.ca

Main Number – 613-533-2561